UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,014	04/23/2004	Kunio Kojima	1785.1016	7648

21171 7590 03/01/2007

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
RIVELL, JOHN A	
ART UNIT	**PAPER NUMBER**
3753	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

ED

Office Action Summary	Application No.	Applicant(s)	
	10/830,014	KOJIMA ET AL.	
	Examiner	Art Unit	
	John Rivell	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/11/06 (amendment)*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Applicant's arguments filed December 11, 2006 have been fully considered but they are not persuasive.

Claim 6 has been canceled. Claims 1-5 and 7 remain pending.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. §102 (b) as being anticipated by Davis.

The patent to Davis discloses, generally at 9 of figure 1 and in detail in several operating positions in figures 3-5, a "quantitative distributor comprising a cylinder (body 20, fig. 2), a piston (32) positioned in the cylinder, an elastic body (conical spring 56) pressurizing the piston (32), the piston (32) being moved by a pressure of a substance (lubricant) intermittently applied to the distributor (at inlet 22, fig. 2; from the left in figs. 3-5) against a force of the elastic body (56), a predetermined volume of the substance to be discharged (through outlet valve 14) from the distributor being determined by a distance of movement of the piston (32) in the cylinder (body 20), wherein a discharge volume of the substance from the distributor corresponds to the pressure of the substance supplied to the distributor, such that the discharge volume of the substance is changed" as recited in claim 1.

Regarding claim 2, in Davis, "the elastic body (conical spring 56) pressurizing the piston (inherently) has a Young's modulus which is variable by a position of the piston"

as recited. For extrinsic evidence of the variable spring rate of a conical spring note Freiheit column 1, lines 56-61 which disclose the variable spring rate of a conical compression spring.

Claim 1 is further, and claim is rejected under 35 U.S.C. §102 (b) as being anticipated by Parker.

The patent to Parker, in figure 4 for example, discloses a "quantitative distributor comprising a cylinder (body 11 defining cylinder space 25), a piston (27) positioned in the cylinder, an elastic body (spring 37) pressurizing the piston (27), the piston (27) being moved by a pressure of a substance intermittently applied to the distributor (at inlet 15) against a force of the elastic body (37), a predetermined volume of the substance to be discharged (through outlet valve 39) from the distributor being determined by a distance of movement of the piston (27) in the cylinder (11 at space 25), wherein a discharge volume of the substance from the distributor corresponds to the pressure of the substance supplied to the distributor, such that the discharge volume of the substance is changed" as recited in claim 1.

Regarding claim 5, Parker discloses a "quantitative distributor comprising a cylinder (body 11 defining cylinder space 25), a piston (27) positioned in the cylinder, an elastic body (spring 37) pressurizing the piston (27), the piston (27) being moved by a pressure of a substance intermittently applied to the distributor (at inlet 15) against a force of the elastic body (37), a predetermined volume of the substance to be discharged from the distributor (through outlet valve 39) being determined by a distance of movement of the piston (27) in the cylinder (25), wherein an inflow side (upper at 24)

and a discharge side (lower at 25) of the cylinder chamber separated from each other by the piston (27) are communicated each other by movement of the piston (27) over a distance more than a distance of movement of a normal operation (see figure 3, "normal operation" distance is read as being a distance moved by the piston 27 which will not effect opening of central valve head 31 and passage 30), such that a conduit (passage 30) for supplying the substance to the distributor and a delivery port of the distributor are communicated each other, such that the discharge volume of the substance is changed" as recited.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Moore (U.S. Pat. No. 1,935,866).

The patent to Davis discloses all the claimed features with the exception of having "the elastic body (comprise) a plurality of elastic elements arranged in series, each of which has a different Young's modulus from each other".

The patent to Moore ('886) discloses that it is known in the art to employ a plurality of serially arranged springs, such as at springs 36 and 37, biasing an injection piston at upper piston 31', in which the strength of spring 37 is less than the strength of spring 36 but greater than the strength of spring 36, spring 36 being the strongest (page 2, lines 1-24) for the purpose of biasing the upper injection piston with a spring mechanism in which the Young's modulus varies thus effecting stroke control by applied pressure in a manner other than the use of a conical spring, whose Young' modulus is also variable. The differences here present mere structural differences performing the same function and are thus functionally equivalent.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Davis plural serial springs of different strengths, in place of the conical spring 56 of Davis for the purpose of biasing the piston with a spring mechanism in which the Young's modulus varies thus effecting stroke control by applied pressure in a manner other than the use of a conical spring, as recognized by Moore ('886).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Deforrest.

The patent to Davis discloses all the claimed features with the exception of having "the elastic body (comprise) a plurality of elastic elements arranged in parallel such that start points of compression of the elastic elements are different from each other due to the position of the piston".

The patent to Deforrest discloses that it is known in the art to employ a plurality of parallel springs 30, 31 each of different length than the other thus presenting a spring mechanism of variable Young's modulus thus effecting stroke/distance control of the biased element by applied pressure in a manner other than the use of a conical spring,

whose Young' modulus is also variable. The differences here present mere structural differences performing the same function and are thus functionally equivalent.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Davis plural parallel springs of different length in place of the conical spring 56 of Davis for the purpose of biasing the piston with a spring mechanism in which the Young's modulus varies thus effecting stroke control by applied pressure in a manner other than the use of a conical spring, as recognized by as recognized by Deforrest.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Dussault.

The patent to Davis discloses all the claimed features with the exception of having "the inflow side and the discharge side of the cylinder chamber separated from each other by the piston... communicated (with) each other by expanding an inner diameter of the cylinder at the point in which the piston is moved over a distance more than the distance of movement of the normal operation". In Davis, "normal operation" distance is read as being a distance moved by the piston 27 which will not effect opening of central valve head 31 and passage 30.

The patent to Dussault discloses that it is known in the art to employ an expanding inner diameter of the cylinder at widening 21 of the cylinder body at the point in which the piston 27 is moved over a distance more than the distance of movement of the normal operation for the purpose of fluidly connecting the inlet 41 to the outlet 43. In Dussault "normal operation" is read as that distance piston 27 moves axially in which the inlet 41 is not connected to the outlet.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Davis a widening of the cylinder containing

the piston at a location "beyond" that location in which the piston occupies during "normal operation" for the purpose of connecting the inlet to the outlet upon movement to a location/position/distance beyond that occupied by "normal operation" as recognized by Dussault.

Regarding applicants remarks concerning the above, the argument that:

> "Davis discloses a lubricating apparatus (on the basis) that the valves 32 and 46 are limited to a constant length like the conventional type distributor (and) thus... a discharged volume of lubricant is constant (whereas) the present invention describes that a discharge volume of a substance can be changed because the discharge volume of the substance from the distributor corresponds to the pressure of the substance supplied to the distributor"

is unpersuasive in that the function implied by the argued language, i.e. discharge volume corresponding to the pressure supplied to the distributor, is necessarily inherent in the device of Davis as follows.

> M.P.E.P. 2131.01, section III states in pertinent part:
> **III. TO SHOW THAT A CHARACTERISTIC NOT DISCLOSED IN THE REFERENCE IS INHERENT**
>
> **Extra Reference or Evidence Can Be Used To Show an Inherent Characteristic of the Thing Taught by the Primary Reference**
>
> To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Continental Can Co. USA v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991) (The court went on to explain that "this modest flexibility in the rule that 'anticipation' requires that every element of the claims appear in a single reference accommodates situations in which the common knowledge of technologists is not recorded in the reference; that is, where technological facts are known to those in the field of the invention, albeit not known to judges." 948 F.2d at 1268, 20 USPQ at 1749-50.). Note that as long as there is evidence of record establishing inherency, failure of those skilled in the art to contemporaneously recognize an inherent property, function or ingredient

> of a prior art reference does not preclude a finding of anticipation. Atlas Powder Co. v.IRECO, Inc., 190 F.3d 1342, 1349, 51 USPQ2d 1943, 1948 (Fed. Cir. 1999).

In view of the widely recognized fluid pressure operation of the valve device 32 of Davis it is believed that ordinarily skilled artisans would easily recognize that the fluid pressure operated piston 32 used therein is clearly capable of being operated by a drive pressure value within a range of, for example, zero to a value equal to the greatest spring strength, at spring 56 at maximum compression, to thus position the piston 32 between extreme positions e.g. closed and maximum open, and at any position therebetween by appropriate applied pressure. The pressure applied to the piston 32 comes from pressure of fluid in the volume between valve pistons 32 and 46. Piston 46 is driven by input fluid pressure from the inlet conduit at the left end of the device as shown in figures 3, 4, and 5. Thus, in the event that a pressure is applied to the inlet, less than the maximum amount required to "fully" operate the valves, first the piston is driven a stroke length less than maximum, compressing the incompressible fluid in the volume between valves 46 and 32, which compressed incompressible fluid forces valve 32 to a less than fully open position thus distributing a volume of fluid les than the entire volume, because a) piston 46 was not driven fully and thus b) valve 32 was not driven fully fluid in the open position.

It is clearly understood that, as disclosed at page 2, lines 69-75 of Davis, that the charge fluid distributed in the device of Davis is constant "so long as the pressure is great enough fully to operate the valves". This disclosure clearly implies that when the fluid pressure applied to operate the valves is greater than zero but not sufficient to "fully" operate the valves, operating pressure values applied to the valves in a range between zero and fully operational would serve to partially operate the valves. Partial operation of the valves would result in partial distribution of fluid as set forth above.

Thus it is believed that the volume of fluid discharged by valve 32 "corresponds" to the pressure of fluid supplied at the inlet in the manner recited in the claim(s).

The same analysis applies to Parker. In Parker, fluid pressure applied in the inlet 15, at values between zero and that which would drive piston 27 to the extreme position (fig. 3) which fully compresses the spring and thus distributes the entire volume to outlet 41, will drive the piston 27 to an intermediate position(s). Since the stroke of the piston 27 determines how much fluid is distributed to the outlet, pressure values applied at the inlet, less than the maximum value, drive the piston to intermediate positions thus distributing fluid at an amount "corresponding" to the pressure supplied at the inlet.

The remaining arguments merely reflect reliance on the alleged allowed independent claims and with respect to claim 7, merely allege that "Davis and Dussault, either alone or in combination, do not describe the features recited in claim 7, nor would it have been obvious to a person of ordinary skill in the are to combine Davis and Dussault to describe the features in claim 7" without any further comment.

As to the combination the patent to Dussault discloses that it is known in the art to employ an expanding inner diameter of the cylinder at widening 21 of the cylinder body at the point in which the piston 27 is moved over a distance more than the distance of movement of the normal operation for the purpose of fluidly connecting the inlet 41 to the outlet 43. Given this teaching, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Davis a widening of the cylinder containing the piston at a location "beyond" that location in which the piston occupies during "normal operation" for the purpose of connecting the inlet to the outlet upon movement to a location/position/distance beyond that occupied by "normal operation" as recognized by Dussault.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (571) 272-4918. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Rivell/

John Rivell
Primary Examiner
Art Unit 3753

j.r.